

Docket No.: 99-469

COMPLETE LISTING OF CLAIMS
IN ASCENDING ORDER WITH STATUS INDICATORS

THIS LISTING OF CLAIMS WILL REPLACE ALL PRIOR VERSIONS AND LISTINGS OF CLAIMS IN THE APPLICATION.

1. (Original) An automated directory assistance system, comprising:
a speech recognition module configured to receive an audible request for a telephone number from a caller and generate a transcript from the audible request;
a listing retrieval module configured to retrieve at least one listing corresponding to the audible request from a database using the transcript; and
an accept/reject module configured to determine whether to accept one or more of the listings retrieved by the listing retrieval module and present a telephone number corresponding to the accepted one or more listings to the caller.
2. (Original) The system of claim 1, wherein the speech recognition module includes a large vocabulary speech recognizer.
3. (Original) The system of claim 1, wherein the speech recognition module is configured to use acoustic models and an n-gram grammar to recognize at least one word included in the audible request.
4. (Original) The system of claim 1, wherein the listing retrieval module includes a statistical information retrieval system.
5. (Original) The system of claim 1, wherein the listing retrieval module is configured to use the transcript as a query into the database to retrieve the at least one listing.
6. (Original) The system of claim 1, wherein the listing retrieval module is configured to rank listings from the database when the listing retrieval module retrieves a plurality of the listings.
7. (Original) The system of claim 1, wherein the accept/reject module is configured to identify at least one word that is required for each of the listings, determine whether the

Docket No.: 99-469

transcript contains the identified at least one word, and accept one of the listings when the transcript contains the identified at least one word with sufficient acoustic confidence.

8. (Original) The system of claim 1, wherein the accept/reject module is further configured to transfer the audible request to a human operator when the accept/reject module accepts none of the listings.

9. (Original) The system of claim 1, further comprising:
a training system configured to automatically configure the speech recognition module, the listing retrieval module, and the accept/reject module.

10. (Original) The system of claim 9, wherein the training system includes:
an acoustic model training module configured to estimate acoustic models from training transcripts relating to requests for telephone numbers, and
a speech grammar estimation module configured to create an n-gram grammar for the telephone numbers, the speech recognition module using the acoustic models and the n-gram grammar to generate the transcript from the audible request.

11. (Original) The system of claim 9, wherein the training system includes:
a listings statistics estimation module configured to identify words used when requesting a particular telephone number, the listing retrieval module retrieving the words for the telephone number using the transcript.

12. (Original) The system of claim 9, wherein the training system includes:
a required words determination module configured to identify at least one word that is required to request a particular telephone number, the accept/reject module using the identified at least one word to determine whether a corresponding one of the listings is acceptable.

13. (Original) The system of claim 9, wherein the training system includes:
a transcription module configured to automatically generate training transcripts corresponding to prior requests for telephone numbers.

14. (Original) The system of claim 13, wherein the transcription module includes:

Docket No.: 99-469

a grammar creation component configured to create a loose grammar corresponding to each of the telephone numbers, and
a speech recognition component configured to generate a training transcript for one of the prior requests using the loose grammar.

15. (Original) The system of claim 14, wherein the transcription module further includes:

an accept/reject component configured to determine whether the generated training transcript is acceptable.

16. (Original) The system of claim 15, wherein the transcription module further includes:

a verification/correction module configured to present the generated training transcript to a human for at least one of verification and modification.

17. (Original) A method for providing directory assistance, comprising:
receiving an audible request for a telephone number from a caller;
generating a transcript from the audible request;
retrieving at least one listing corresponding to the audible request from a database
using the transcript as a query into the database;
determining whether to accept one or more of the retrieved listings; and
presenting a telephone number corresponding to the accepted one or more listings to the caller.

18. (Original) The method of claim 17, further comprising:
estimating acoustic models from speech and training transcripts relating to requests for telephone numbers; and
creating an n-gram grammar for the telephone numbers.

19. (Original) The method of claim 18, wherein the generating includes:
using the acoustic models and the n-gram grammar to recognize at least one word included in the audible request.

20. (Original) The method of claim 17, further comprising:

Docket No.: 99-469

identifying words relating to each of a plurality of telephone numbers; and
storing the words in the database.

21. (Original) The method of claim 20, wherein the retrieving includes:
using the transcript as a query into the database to retrieve the words relating to the
telephone number.

22. (Original) The method of claim 17, wherein the retrieving includes:
ranking listings from the database when a plurality of the listings are retrieved.

23. (Original) The method of claim 17, wherein the determining includes:
identifying at least one word that is required for each of the retrieved listings,
determining whether the transcript contains the identified at least one word, and
accepting one of the retrieved listings when the transcript contains the identified at
least one word.

24. (Original) The method of claim 17, further comprising:
transferring the audible request to a human operator when none of the retrieved
listings are accepted.

25. (Original) The method of claim 17, further comprising:
automatically generating training transcripts corresponding to prior requests for
telephone numbers.

26. (Original) The method of claim 25, wherein the automatically generating includes:
creating a loose grammar corresponding to each of the telephone numbers, and
generating a training transcript for one of the prior requests using the loose grammar.

27. (Original) The method of claim 26, wherein the automatically generating further
includes:
determining whether the generated transcript is acceptable.

28. (Original) The method of claim 27, wherein the automatically generating further
includes:

Docket No.: 99-469

presenting the generated transcript to a human for at least one of verification and modification.

29. (Original) A system for providing automated directory assistance, comprising:
means for receiving a request for a telephone number from a caller;
means for generating a transcript from the request;
means for retrieving a listing corresponding to the request from a database using the transcript as a query into the database;
means for determining whether to accept the retrieved listing; and
means for presenting a telephone number corresponding to the accepted listing to the caller.

30. (Currently Amended) A computer-readable medium that stores instructions executable by at least one processor to perform a method for providing directory assistance, comprising:

recognizing at least one word in an audible request for a telephone number received from a caller;
generating a transcript from the audible request;
retrieving at least one listing corresponding to the audible request from a database using the ~~at least one word~~ transcript as a query into the database;
determining whether to accept one or more of the retrieved listings; and
presenting a telephone number corresponding to the accepted one or more listings to the caller.

31-52. (Cancelled)

53. (Currently Amended) A method for providing a directory assistance service, comprising:

receiving a request for a telephone number from a caller, the request being spoken by the caller and including a location and listing corresponding to the telephone number;
using large vocabulary speech recognition to recognize at least one word spoken by the caller when making the request;
generating a transcript from the at least one word;

Docket No.: 99-469

using statistical information retrieval and the transcript to identify a listing corresponding to the recognized word;
determining whether the listing is likely to be correct; and
providing a telephone number corresponding to the listing to the caller.

54. (Currently Amended) A method for providing a directory assistance service, comprising:

receiving a request for a telephone number from a caller, the request being spoken by the caller and including a location and listing corresponding to the telephone number;

using large vocabulary speech recognition to recognize at least one word spoken by the caller when making the request;

generating a transcript from the at least one word;

using statistical information retrieval and the transcript to identify a listing corresponding to the recognized word; and

connecting the caller to a called party corresponding to the listing.